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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,809	09/26/2003	Nurul Amin	169.12-0599	6881

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EXAMINER	
RENNER, CRAIG A	

ART UNIT	PAPER NUMBER
2652	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/671,809	AMIN ET AL.	
	Examiner	Art Unit	
	Craig A. Renner	2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *15-20* is/are allowed.

6)☒ Claim(s) *1-14 and 21-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 September 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *26 September 2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c). Note, for instance, the residence and mailing address of Mark T. Kief.

Drawings

2. The drawings are objected to because of the following informalities:

a. The drawings fail to comply with 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "second return pole" and "second magnetic gap" both set forth in claim 19 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

b. The drawings fail to comply with 37 CFR 1.84(p)(5) because they include one or more reference characters not mentioned in the description. Note, for instance, "*T*" (shown thrice in FIG. 2, for instance) and "220" shown in FIG. 3, for instance).

c. The figure on drawing sheet "4/4" should be labeled --FIG. 5-- in order to be consistent with the remainder of the disclosure.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), an amendment to the specification in compliance with 37 CFR 1.121(b), and/or an amendment to the claims in compliance with 37 CFR 1.121(c) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

4. The disclosure is objected to because of the following informalities:

a. In line 25 on page 6, "disc 14" should be changed to --disc 12-- in order to be consistent with the remainder of the disclosure.

b. In lines 9, 10 and 13 on page 9, each instance of "MR sensor 120" should be change to --MR sensor 128-- in order to be consistent with the remainder of the disclosure.

c. In lines 24-25 on page 14 and lines 11-12 and 13 on page 15, each instance of "reader shields 224 and 226" should be change to --reader shields 222 and 224-- in order to be consistent with the remainder of the disclosure.

d. In lines 14-15 on page 15, each instance of "top or bottom reader shields 224 or 226" should be change to --top or bottom reader shield 222 or 224-- in order to be consistent with the remainder of the disclosure.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-14 and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Koike (US 6,177,207).

With respect to claims 1-8, Koike teaches a transducing head comprising a main pole (11); and at least one magnetic element (7/8) spaced from the main pole, wherein the magnetic element provides a potential return path for a magnetic field produced by the main pole, and has a first edge (on layer 8) closest to the main pole (as shown in FIG. 1, for instance), a second edge (on layer 7) furthest from the main pole (as shown in FIG. 1, for instance), wherein permeability of the magnetic element increases from the first edge to the second edge (lines 55-65 in column 12, for instance, i.e., the permeability of layer 7 is increased with respect to layer 8) [as per claim 1]; wherein the magnetic element is formed of a plurality of layers (7 and 8), each succeeding layer having greater permeability (lines 55-65 in column 12, for instance, i.e., the permeability of layer 7 is increased with respect to layer 8) [as per claim 2]; wherein a ratio of permeability between adjacent layers is approximately constant (lines 55-65 in column 12, for instance, i.e., since there are only two layers, the permeability between adjacent layers would be approximately constant especially in as broad as the term "approximately" may be construed) [as per claim 3]; wherein the magnetic element is a return pole (as shown in FIG. 1, for instance) [as per claim 4]; wherein the return pole has a shape selected from the group consisting of rectangular, round, and elliptical (as shown in FIG. 1, for instance, i.e., rectangular) [as per claim 5]; wherein the magnetic element is a reader shield (as shown in FIG. 1, for instance) [as per claim 6]; wherein the main pole is formed of magnetic material (line 66 in column 12 thru line 3 in column

13, for instance) [as per claim 7]; and wherein the magnetic element is formed of magnetic material (lines 55-57 in column 12, for instance) [as per claim 8].

With respect to claims 9-14, Koike teaches a transducing head comprising a main pole (11); and at least one magnetic element (7/8) spaced from the main pole, wherein the magnetic element provides a potential return path for a magnetic field produced by the main pole and is formed of a plurality of layers (7 and 8), each succeeding layer having greater permeability (lines 55-65 in column 12, for instance, i.e., the permeability of layer 7 is increased with respect to layer 8), with a highest permeability at an edge (on layer 7) of the magnetic element furthest from the main pole (as shown in FIG. 1, for instance, i.e., layer 7 is furthest from the main pole) [as per claim 9]; wherein a ratio of permeability between adjacent layers is approximately constant (lines 55-65 in column 12, for instance, i.e., since there are only two layers, the permeability between adjacent layers would be approximately constant especially in as broad as the term "approximately" may be construed) [as per claim 10]; wherein the magnetic element is a return pole (as shown in FIG. 1, for instance) [as per claim 11]; wherein the magnetic element is a reader shield (as shown in FIG. 1, for instance) [as per claim 12]; wherein the main pole is formed of magnetic material (line 66 in column 12 thru line 3 in column 13, for instance) [as per claim 13]; and wherein the magnetic element is formed of magnetic material (lines 55-57 in column 12, for instance) [as per claim 14].

With respect to claims 21-23, Koike teaches a perpendicular write head comprising a main magnetic pole (11); a second magnetic element (7/8), separated

from the main magnetic pole (as shown in FIG. 1, for instance); and means for reducing a peak magnetic field at a trailing edge of the second magnetic element to reduce side writing at the second magnetic element (lines 55-65 in column 12, for instance, i.e., the permeability of layer 7 is increased with respect to layer 8, for instance) [as per claim 21]; wherein the means for reducing a peak magnetic field comprises regions of different permeability within the second magnetic element (lines 55-65 in column 12, for instance, i.e., the permeability of layer 7 is increased with respect to layer 8), with a region (8) having a highest permeability at an edge (on layer 8) furthest from the trailing edge (as shown in FIG. 2, for instance, i.e., layer 8 is furthest from the trailing edge) [as per claim 22]; and wherein a ratio of permeability between adjacent regions is approximately constant (lines 55-65 in column 12, for instance, i.e., since there are only two layers, the permeability between adjacent layers would be approximately constant especially in as broad as the term "approximately" may be construed) [as per claim 23].

Claim Rejections/Considerations - 35 USC § 103

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Allowable Subject Matter

8. Claims 15-20 are allowable over the prior art of record. The prior art of record does not teach nor suggest a perpendicular write head with a return pole spaced from a write pole by a magnetic gap, wherein the return pole has a permeability which is less at an edge closest to the write pole and greater at an edge furthest from the write pole, and further wherein the return pole has a greater thickness than the write pole.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (571) 272-7580. The examiner can normally be reached on Tuesday-Friday 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Craig A. Renner
Primary Examiner
Art Unit 2652

CAR